

REMARKS

CLAIMS

Claims 2, 3, 5-7, and 35-53 were previously pending. By virtue of the amendments set forth below, Applicant is amending Claims 35 and 37. Accordingly, after entry of the amendments below, Claims 2, 3, 5-7, and 35-53 will be pending.

CLAIM REJECTIONS §112

The Examiner rejected Claims 35-42 under 35 USC §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner alleges that it is not clear how the elements of Claims 35-42, drawn to a stretching tool or a temporary stretching-holding device, further limit the elected invention as illustrated in Figure 3 of the application. The Examiner states that the stretching tool and temporary stretching-holding device are not required to meet the claim limitations of independent Claim 2, and do not represent the final apparatus as claimed in independent Claim 2.

Applicant has amended Claims 35 and 37 (and thereby the other claims against which the Examiner has posited this rejection), and respectfully requests that the rejection be withdrawn. Among other things, those claims now even more clearly identify that the elements added by those claims 35-42 are in combination with the elements in the claims from which they depend (e.g., Claim 2).

Thus, Claim 2 defines apparatus "for joining a plurality of pieces of pipe, including a first piece of pipe and a second piece of pipe...", and Claim 35 now requires the apparatus of Claim 2 in combination with a stretching tool having a channel formed to receive an edge of the first

piece of pipe. Thus, the relationship between the first pipe element of Claim 2 and the further apparatus (stretching tool with a channel formed to receive the first pipe edge) is sufficiently defined. Moreover, once a claim is allowed, all claims depending from that claim are likewise allowable. As explained herein, Applicant respectfully submits that Claim 2 is allowable. Accordingly, Claim 35 (for example) is allowable as depending from that allowable Claim 2.

CLAIM REJECTIONS §102 AND §103

The Examiner rejected:

- Claims 2, 5, 6, 43-47, 49 and 50 under 35 U.S.C. 102(e) as allegedly being anticipated by Graves (U.S. 6,416,667);
- Claims 3, 7, 48, and 51-53 under 35 U.S.C. 103(a) as allegedly being unpatentable over Graves in view of Fochler (U.S. 3,330,303).

Applicant also notes that, of those rejected claims, Claims 2, 43, 49, 50, and 53 are independent. To the extent that those Claims 2, 43, 49, 50, and 53 are shown to be allowable, all claims depending from them are likewise allowable. Accordingly, Applicant's remarks below are directed to those independent Claims 2, 43, 49, 50, and 53 (and through dependency, to the remaining rejected claims).

Preliminarily, Applicant respectfully notes that Graves is used as a basis for all of the rejections. Accordingly, the comments below regarding Graves may be applicable to most, if not all, of the other rejections.

Applicant respectfully submits that Graves does not appear to disclose or make obvious ANY (or very few) of the elements claimed in Applicant's claims. Among other things, Graves asserts his device as "three piece sectional solids settling and retention basin 21 of FIG. 2" (col.

7, lines 63-64). Absent some evidence from the Examiner, Applicant respectfully submits that persons of ordinary skill in the art would not consider Graves' three piece vertically-oriented "settling basin" to be analogous to Applicant's piping system of corrugated drainpipe.

In fact, Graves' own use (and lack of use) of certain terms indicates that Graves' patent is not analogous to corrugated pipe art. For example, Graves does not even use the terms "rung" or "corrugated" at all. In addition, Applicant understands that persons of ordinary skill in the art of corrugated pipe will understand the term "valley" to mean something very different than the meaning to which Graves has given to that term. Instead of using the term "rung" (which is a term that is used in the "corrugated pipe art" and also by Applicant), Graves uses "valley" to describe the radially diametrically outermost portion of his basin structure. In order to be equivalent to Applicant's "rung", the corresponding structure in Graves would have to include Graves' "valley" and connecting "walls" (such as Graves' element 37). Graves' "walls" would correspond to Applicant's sidewalls of Applicant's U-shaped rungs.

Graves' contrary use of "ribs" and "valleys" is exemplified in the following portion of his specification:

"The ribs 33 are of a substantially lesser internal diameter than the diameter of the ribs 34 and the valleys 35 are of a greater axial height and a greater diameter than the axial height and diameter of the valleys 36. For the most part, the ribs and the valleys are arranged in the axial sequence 33, 34, 35, 36; 33, 35, 34, 36; etc.

Within each such sequence of ribs and valleys, each rib 33 and its adjacent valley 35 are defined by wall 37 common to each rib 33 and each valley 35. Each rib 33 also includes an innermost cylindrical wall and portion 38 and each valley 35

adjacent thereto includes an outermost cylindrical wall portion 39.” (Graves, at col.8, lines 9-20, and Figs. 4, 5 and 6; emphasis added); (also see more generally, Graves, col. 7, line 63 thru col. 8 line 48, and corresponding figures).

In contrast to Graves’ terminology, persons of ordinary skill in the art of corrugated pipe will understand that “rung” refers to the diametrically radially outwardly protruding ring portion of the corrugation (or the “U” shaped portion when viewed in cross-section, with the bottom of the “U” shape being the largest diameter of the pipe). Likewise, persons of ordinary skill in the art of corrugated pipe will understand that “valley” (in the art of corrugated pipe) refers to the radially smaller diameter that lies between and connects the corrugated pipe rungs to each other.

Graves also uses the term “rib” for what persons of ordinary skill in the art of corrugated pipe (and Applicant) would label as a “valley” within a corrugated pipe, and (as indicated above) the term “valley” to define what one skilled in the art would designate as the “rung portion”. For example, Graves connects a specific “rib” 33 (which would be a “valley” to one skilled in the corrugated pipe art) to a specific “valley” 35 (“rung portion” to one skilled in the art) with wall 37 (e.g., see Graves at col. 8, lines 14-18, Fig. 5). Graves thus distinguishes his “rib” and “valley” and “walls” from the conventional notation within the corrugated pipe art (and within Applicant’s invention) for “valley” and “rung” (including “sidewalls” of the rung).

Moreover, based on Applicant’s sense of “persons of ordinary skill in the art of corrugated drainpipe”, the terminology used by Graves may even cause significant confusion. In order to even try to discuss Graves’ teachings in light of Applicant’s present inventions, one must mentally substitute (1) “valley” for Graves’ “rib”, (2) Applicant’s outer rung portion for Graves’ “valley”, and (3) sidewalls portions of Applicant’s rung for Graves walls. In direct opposition to

the use of those terms within the art of corrugated drainpipe and within Applicant's inventions, Graves defines "valley" and "rib" such as the following: "A plurality of alternating internally projecting peripheral ribs 33, 34 and inwardly opening valleys 35, 36 are disposed substantially along the axial length of the tubular body 31." (Col. 8, lines 6-9, also see Graves' Figs. 5 and 6).

Regardless of Graves' contrary terminology (that is, even if Applicant were to concede that Graves' use of "valley" and "rib" and "wall" did NOT differ from the conventional corrugated pipe art definitions of those terms, points that Applicant does NOT concede), Graves' device would still not disclose or make obvious the elements of Applicant's device. Perhaps most importantly, because Graves' female and male joint structures are clearly designed and specified by Graves to have dissimilar diameters, they constitute a conventional prior art bell and spigot joint (similar to those Applicant has previously distinguished). Indeed, it does not appear that Graves' joint can be interpreted in any other way. In other words, Graves teaches away from and is counter intuitive to various elements of Applicant's present inventions, such as Applicant's substantially similar diameters of the male and female joint structures, the material shape memory quality/temporary deformation, and compressive self gripping force of Applicant's present invention.

In that regard, Graves' retention basin consists specifically of three sections. Each section consists of a sequence of "ribs" 33 and 34 of unlike diameters, and "valleys" 35 and 36 of unlike diameters. Applicant respectfully notes that Graves' teaches to use "valleys" of varying height and diameter ("valleys 35 are of greater axial height and greater diameter than the axial height and diameter of valleys 36"; see also Figure 4, portions 35 and 36 joining basin sections 22 and 23). More specifically regarding Graves' bell/spigot joint, Graves describes his "outermost

cylindrical wall portion 39” relationship to larger “valley” 35 and smaller “valley” 36 by further qualifying the dissimilar diameters as an essential component creating a nesting relationship between sections of his device: “a cylindrical wall portion 49 of each smaller valley 36 (FIG. 6) will telescopically seat within the remaining portion of the wall portion 39 of the larger valley 35 resulting in the telescopic nested supported relationship” (col. 8 lines 42-46; also see Fig. 4 wall portion 39). This further supports a finding that Graves is not analogous to Applicant’s present inventions.

Said another way, Applicant’s present invention clearly teaches a joint where the male and female members are substantially diametrically equal, whereas Graves teaches unequal diameters of female and male structure components. Applicant respectfully submits that one skilled in the art would unquestionably determine Graves to teach away from Applicant’s concept (or at the very least to not teach or make obvious Applicant’s inventions). Graves teaches a bell and spigot joint wherein the bell (female portion) is designed to have a larger diameter than the spigot (male portion). This is clearly illustrated in Graves’ Figs. 2, 4, 6, 8, 9. Graves does not disclose nor suggest a female structure having a temporary deformation to receive the male structure. In other words, the Graves joint components are clearly of different diameters. Graves teaches unequal diameter cylinder portions to facilitate a telescoping joint.

The Examiner further rejects claim 5 based on Graves’ female end being temporarily deformed. Among other things, the elasticity and shape memory properties of Applicant’s joint are nowhere described, considered, or suggested by Graves. Graves does not even mention temporary deformation of the female joint structure. Instead, Graves teaches that the female and male structures are of unequal diameters (so the male will fit into the female); nowhere does

Graves suggest the elasticity, shape memory qualities or sufficient compressive self gripping force as taught and claimed by Applicant. As previously stated, Graves teaches away from the present inventions (and does not disclose or make obvious the present inventions).

Applicant's Claim 6 is rejected because Graves discloses a sealing element. In view of the aforementioned dissimilarities between Graves and Applicant's invention, Applicant respectfully submits that Graves' sealing element teachings cannot support the Examiner's rejections.

Claims 3, 7, and 51-53 are rejected by the Examiner as allegedly being unpatentable over Graves in view of Fochler. According to the Examiner, Fochler introduces an internal non-corrugated liner pipe element that when combined with the Graves sinusoidal retention basin section joint portion would make the present invention obvious to one having ordinary skill in the art at the time.

Among other things, Applicant respectfully submits that introducing an internal non-corrugated liner pipe to Graves telescoping retention basin, as dictated by Graves, still does not result in the joint as described and claimed in Applicant's present inventions. Even for embodiments of Applicant's invention that do NOT have an inner liner pipe, the present invention uses a contrary joint method compared to Graves (as explained above), and introduction of Fochler's inner liner pipe to Graves' retention basin would NOT overcome those shortcomings.

Further in that regard, the Examiner rejects claim 7 on the basis that Fochler teaches an adhesive material acting between confronting surfaces of first and second pieces of pipe, claim 52 based on a butt joint of the smooth inner liner elements of the pipe pieces and claim 53, based on

the gasket element. Applicant again respectfully submits that these claims should be allowed since the joint method of Graves is significantly different than the primary joint method claimed in the present invention.

In view of the remarks set forth above, it is thought that the application is now in condition for allowance, notice whereof is respectfully requested of the Examiner.